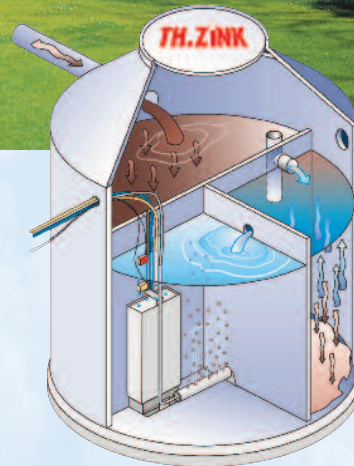


Fully Biological Small Sewage Plants

*A clean object – for the sake of environment –
one step ahead of the legal requirements*



Increase the value of your home and property with a fully biological ZINK small sewage plant made from concrete.



TH.ZINK
Intelligent Solutions

Responsibility for Our Environment

In northern Germany we have been successfully active in business for more than 50 years and have become widely recognized as manufacturers of high-end windows and doors as well as with an up-to-the-minute, efficient concrete plant. With more than 45 employees we enjoy an excellent reputation as a family enterprise in our region. Lately we have established and distinguished our concrete plant for sewage systems as a powerful partner of the construction materials industry,



building contractors, as well as with specialists/engineering offices. As manufacturers of concrete tanks and fully biological sewage technique, we already specialized in decentralized waste water treatment (small domestic sewage plants, small sewage plants up to 100 residents) many years ago. At our location, Bergen in Lower Saxony/Germany, we make excellent productive quality with highly advanced technology, which convinces our customers with their proven excellent sewage results and individual service. We arrange the service legally required of small sewage plants and manage and communicate them via the digital data system „DIWA“ for more than 500 households in Lower Saxony and Schleswig-Holstein.

Furthermore, we are manufacturers of concrete tanks for utilisation of rainwater, silage effluent tanks, as well as fermentation gas plants.

Future-Proof Products

Scientifically recognized, ZINK sewage systems offer the best sewage performance according to the current state of technology. Comprehensive certification of ZINK Products renders a high degree of security. Already nowadays the sewage performance of our Products exceeds the legally required minimum, since they partly are considerably below the limits set. Thus when deciding for ZINK sewage systems you will certainly also be on the safe side should the sewage values be tightened by law.

Concrete – a Building Material Safe and Close to Nature

Concrete is a building material giving important guarantee for long-life cycles of our Products, it is especially qualified also for high groundwater levels – a crucial advantage over synthetic material. We take non-corrosive concrete rating C35/4 (B45), and furthermore, we are regularly checked by the quality protection for concrete.



Best Solution, Full Service

With us you will have the reassuring feeling to be in good hands right from the start. Extensive and individual advice and assistance go without saying in our company. It starts with a professional analysis on site by one of our sales engineers or resellers. All requirements and basic conditions on your side will be checked and evaluated. So we can determine your real needs and are then able to dimension with your help the sewage system optimal for you. We take the delivery of your sewage system, our technicians or resellers carry out the assembling work necessary, and they put the sewage system into operation. Excavation work is done by our civil engineering partners in your region. If desired, we will gladly help you to find them.

Our focus in daily routine always is on environmentally-conscious and economic thinking and acting.



Domestic Waste Water Treatment in Rural Areas



Why do we need a decentralised waste water treatment?

At the end of 2002, legal minimum requirements, which had not been existing up to that point, were established for small sewage plants all over Germany. As many old plants only consist of a mechanic cleaning (three-chamber system) with downstream subsurface percolation, many districts and communities ask for modernisation of such plants.

Residents in rural areas have to decide sooner or later how to find a suitable solution for waste water treatment. Especially in regions thinly populated a centralised waste water treatment, which can be offered in larger municipalities, is not economical. You, as a house owner, can even benefit from this situation, since a decentralised solution consists of smaller components, and is therefore often lower-priced than the centralised connections might be with the communal waste water cooperative. A modern fully biological small sewage plant from concrete will further increase the value of your house and property.

When it is to be a safe and reliable solution

We are gladly prepared to assist you to find your decision for a sewage system tailored to your needs. As a ZINK customer you will enjoy the comforting assurance to be able to rely on the most dependable products approved in Germany presently.

In Line with Nature – the Way Small Sewage Plants Work

Nature as a Role Model

Fully biological sewage plants function like nature as a model. They utilize the same procedure that also takes care of cleaning water in natural waters. Useful bacteria are responsible for the decomposition of harmful substances. These little assistants do already exist in the waste water, and it is not necessary to revive them. Treatment is especially effective when there is enough oxygen in the water and the water remains in motion.

Mechanic

The first step of cleaning is always a mechanic pre-cleaning. At first the reject is detained, heavy particles drop to the ground, floatable parts stay on the surface of the first chamber, they also include grease and oil.

Biological

Then the fully biological main treatment takes place. The bacteria need oxygen for optimal living conditions. With their aerobiosis they generate the decomposition of harmful substances. A systematic, variable oxygen

supply optimises the work of the bacteria and decreases the operating expenses.

Economic

A final sedimentation is necessary during the last working stage of the small sewage plant. Bacteria are settling, and only the treated waste water is allowed to leave the plant. Most plants need a separate chamber for deposition during final sedimentation. With SBR Systems, like the ZINK Vario-Module, a rest period after treatment is sufficient to obtain the sedimentation.

Variable

ZINK Vario-Module-SBR-Plants can be made in both versions: one-tank as well as multiple-tank plants with different numbers of chambers and different diameters of the tanks.

Our small sewage plants work like nature does, in the nature and for the nature. Simply variable: ZINK Vario-Module.

ZINK Small Sewage Plants – for Environment’s Sake

Popular, alive, aerated

The modern SBR-Plant, “ZINK Vario-Module” works in two chambers (triple- or multi-chamber plants can also be used). One chamber works for the mechanic pre-treatment. Big particles are retained, and at the same time the chamber collects the waste water leaving your house. With this buffer function the plant can adapt to your life rhythm. The bacteria in the second chamber, the surface aerated chamber, get a selected amount of waste water from the buffer.

Being able to estimate the amount of pollutants well, we are also able to adapt the ventilation optimally to the desired cleaning result. Thus we optimise your operation expenses at the same time.

Take a rest

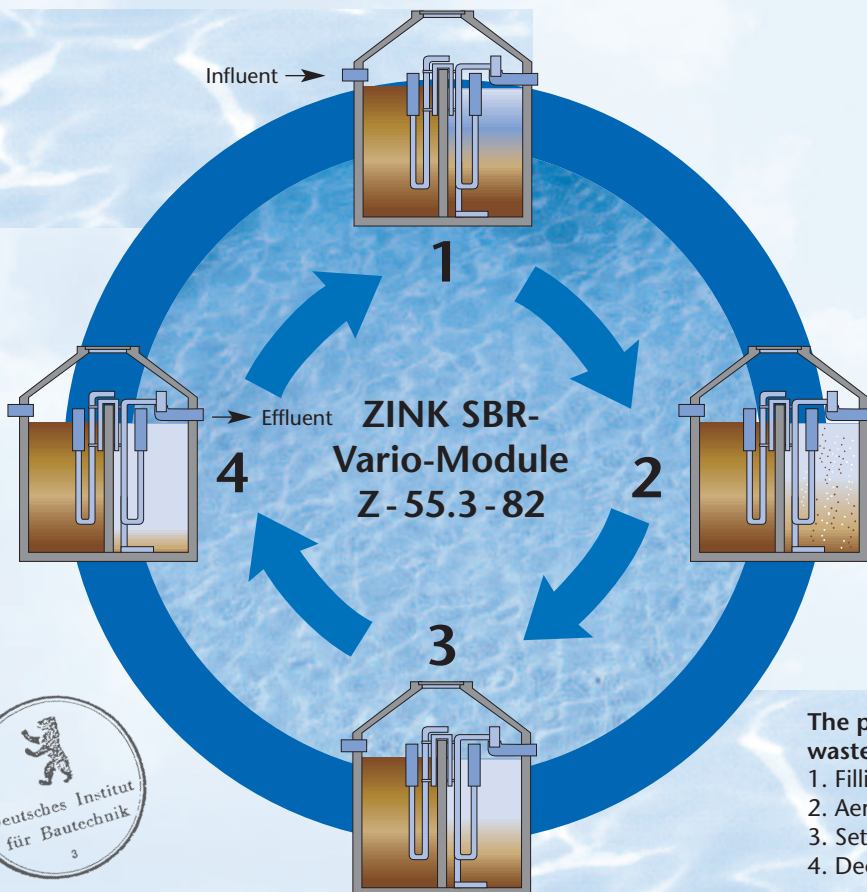
After the main treatment there is a resting phase, in which the bacteria drop to the ground of the surface aerated chamber. Only the treated water is allowed to leave the plant. Additionally we carry back the surplus bacteria to the sludge storage, where they can be stored till the sludge draining. This procedure is repeated by factory provided setting three times a day.

No technical devices in the waste water

Of course, the whole cleaning process of the SBR Plant ZINK Vario-Module is carried out fully automatically. Easy handling is also ensured by the fact that there is no single mobile component in the waste water or that there is no necessity for power supply. Compressed air is used for transportation of the waste water. This is the same compressed air which also supplies aerial oxygen to the bacteria. Costly pumps are not required.

To transport the water, a magnetic valve is connected. Thus the whole plant can be operated by only a single linear diaphragm compressor. Control, air-distributor and compressor are mounted in a cabinet and can easily be operated.

Control Cabinet ZINK SBR Plant 50 residents



The picture shows the steps of fully organic waste water treatment:

1. Filling
2. Aeration/mixing
3. Settling (Sedimentation)
4. Decanting (drain of cleaned sewage water)

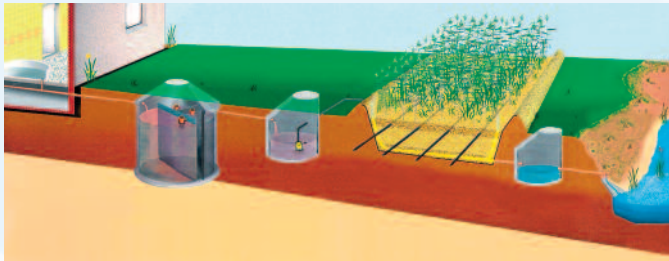


(European Organisation for Technical Appraisals)

Three Different Systems: Good – Better – SBR

The Natural | Reedbed Filter

Reedbeds in form of overgrown soil filters stand for proven procedures at ground level. Due to their plant growth they can easily be integrated into existing landscape. With vertical reedbeds the waste water is distributed from above onto the beds and then percolates the gravel. Pollutant decomposition is executed by bacteria. To prevent the filter from clogging, a three-chamber pit according to ATV Worksheet 262 and a pump shaft has to be installed in front of the bed. With reedbeds you regularly have to maintain the vegetation and service the distributors of the pump. When there is sufficient surface, the running costs are low. Now with **General Technical Approval Z - 55.4 - 310** (Evaluation Classification C).



Z - 55.4 - 309 (Running Classification N)

The Robust | Aerated Fixed Bed System

Aerated Fixed Bed Systems (also Moving Bed Systems and trickling filter plants) are our example for systems offering material to bacteria, e.g. a net like tube package for them to settle on and to be cultivated. This case is also called biofilm process. The oxygen required is added by a blower. Later the air is distributed in fine bubbles across the waste water by membrane tubes or plate diffusers. This offers ideal conditions for the micro-organisms.



The biofilm process works in a through feed method – here the pollutants carried are compensated discharge of the same amount of treated waste water. High shock load has an adverse effect on the cleaning. With low load, good cleaning results can be achieved.

The Optimum | SBR System

SBR Systems, like the ZINK Vario-Module, are the up-to-the-minute example of a biological water treatment. For treating domestic waste water, these plants are most used. The abbreviation SBR (Sequencing Batch Reactor) means that treatment is done subsequently and not in different chambers or tanks. This renders the plant especially easy to set and thus effective to apply. The main treatment is done by simply oxygenating bacteria in a chamber. Plants are only user friendly when no technical components have to be installed into the sewage tank. Even float switches can be dispensed with. The plant can be adapted to different tanks, and thus operating costs can be set in the best possible way. For future development of membrane aeration plants the treated waste water will even have bathwater quality and it will be possible to use it again as service water.

Picture: Huber Membrane Technology



A Clean Affair – Our Fully Biological Small Sewage Plants.



With us you find everything in one hand: consultation, production, delivery, assembly, and service. For more than 50 years, the name ZINK has been standing for pioneering innovations and environmentally friendly solutions. Do also trust us.

We are certified manufacturers and suppliers of:

- Fully biological aerated fixed bed systems
- Multi-chamber slam sewage plants
- Rainwater utilization plants
- Fully biological SBR Systems
- Reedbeds
- Silage effluent tanks

Is there anything to clarify? Talk to us – we are looking forward to your phone call!

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TH.ZINK

Intelligent Solutions

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